New Records of Nudibranchs from New Jersey

BY

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In a recent paper by Franz (1968), it was suggested that the paucity of records for species of nudibranchs occurring in New Jersey can be attributed to the absence of systematic and diligent collecting along the coastline. Although the general substrate of muddy-sand in New Jersey might restrict the number of species of nudibranchs, there are suitable outcroppings of man-made jetties and floating wharves where nudibranchs may occur. It is probable that new state records will occur for various kinds of invertebrates as collecting intensity increases. This was shown to be true for benthic, macroscopic algae by Taylor *et al.* (1968). The following list represents new information concerning the occurrence and distribution of nudibranchs along the Atlantic coast of North America.

NUDIBRANCHIA

DENDRONOTACEA

1. *Dendronotus frondosus* (Ascanius, 1774), as *Dendronotus arborescens in* Miner (1950). Occurrence: Shark River, April-May, 1968. Previous distribution, from Bay of Fundy to Long Island Sound (Moore, 1964).

Many hundreds of this species were found in association with *Tubularia* on a floating wharf. Color ranged from nearly pure white to dark brown. Odhner (1939) asserts that the white form of *Dendronotus* is predominant in deep water.

2. *Doto coronata* (Gmelin, 1791), as *Idulia coronata in* Moore (1964). Occurrence: Shark River, May, 1968. Previous distribution, from Bay of Fundy to Long Island Sound (Moore, 1964). Originally described from Great Egg Harbor, New Jersey, by Verrill & Smith (1873), but rediscovered only recently.

DORIDACEA

3. *Acanthodoris pilosa* (O. F. Müller, 1776), as *Doris pilosa in* Alder & Hancock (1845 - 1855) and as *Doris bifida in* Verrill & Smith (1873). Occurrence: Delaware Bay, May, 1968. Previous distribution, throughout New England (Moore, 1964). Reported, however, from Maryland by Marcus (1961).

A single specimen of this dorid was collected from among unidentified encrusting ectoprocts on the back of a large *Limulus*.

EOLIDACEA

4. *Trinchesia aurantia* (Alder & Hancock, 1842), as *Eolis aurantia in* Alder & Hancock (1845 - 1855), as *Montagua gouldii in* Verrill & Smith (1873), as *Catriona aurantia in* Abbott (1954), and as *Cratena aurantia in* Moore (1964). Occurrence: Shark River, April-May, 1968. Previous distribution, from New Hampshire to Woods Hole (Moore, 1964).

This species occurs commonly on the Connecticut shore on *Tubularia* (Franz, personal communication); however, this is the first instance of *Cratena aurantia* in New Jersey. Specimens were found in association with *Dendronotus frondosus* among thick growths of *Tubularia* on floating wharves, although its food source could not be ascertained.

5. *Eubranchus pallidus* (Alder & Hancock, 1842), as *Eolis picta in* Alder & Hancock (1845 - 1855) and as *Aeolis picta in* Gould & Binney (1870). Occurrence: Shark River, February, 1967. Previous distribution, from Bay of Fundy to Rhode Island (Moore, 1964).

This single specimen was found very low on the intertidal zone of an exposed jetty, among unidentified hydroids. It is interesting to note that *Lomentaria orcadensis*, a rare species of boreo-arctic algae for New Jersey, was

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also found from this same collection. Franz (personal communication) reports *Eubranchus pallidus* as being commonly found on *Obelia* along the Connecticut shore.

6. *Tergipes tergipes* (Forskal), as *Eolis despecta in* Alder & Hancock (1845 - 1855), as *Aeolis despecta in* Gould & Binney (1870), as *Tergipes despectus in* Moore (1964) and *in* Franz (1968). Occurrence: Shark River, May, 1968; previously a single animal collected at Shark River by Franz (1968) in November, 1961. Previous distribution, from Bay of Fundy to Rhode Island (Moore, 1964).

A second specimen of *Tergipes despectus* reported for New Jersey in 7 years qualifies this species as rare.

7. *Aeolidia papillosa* (Linnaeus, 1761), as *Eolis papillosa in* Alder & Hancock (1845 -1855) and as *Aeolis papillosa in* Gould & Binney (1870) and *in* Miner (1950). Occurrence: Shark River, May, 1965 - 1968; Manasquan River, May, 1967 - 1968; also reported by Franz (1968) for August, 1964. Previous distribution, from Bay of Fundy to Woods Hole (Moore, 1964); from Greenland to Rhode Island (Miner, 1950). Franz (personal communication) reports this species as being common in Connecticut.

When first collected by Franz, this species was considered quite rare for New Jersey. It has been our experience that *Aeolidia* is rapidly becoming established in the estuaries of New Jersey as evidenced by its rather common occurrence in both Shark River and Manasquan Inlet during the spring of 1968 (Alan Schwartz, Rutgers University, personal communication). Specimens of 3 - 4 cm have been taken from both localities. Both of these inlets are characterized by water of high salinity and rock jetties. Although our records for this nudibranch are from the rocks, Schwartz reports these animals from within the estuary.

DISCUSSION

It is becoming more evident that the marine fauna of New Jersey, especially the nudibranch mollusks, represents a southern extension of the New England fauna, as was originally suggested by Franz (1968). It is not known, however, whether the species reported in this paper have recently invaded New Jersey or have been here unnoticed all along. Invasion by northern species of algae is apparently occurring, as in the case of *Codium fragile* (see Taylor, 1967). It is, therefore, possible that the eggs of nudibranchs, or the animals themselves, are being transported southward along the Atlantic coast by the same mechanism that is moving the algae. Once in New Jersey, they might then establish themselves in the man-made, compatible habitats that are being rapidly established in this densely populated coastal state.

The white form of *Dendronotus* is reported generally from deep water (Odhner, 1939). However, of the specimens collected in Shark River, at least 3 out of approximately 20 were of the white variety. All of these specimens were on floating wharves and, therefore, never deeper than several feet below the surface of the water. One white specimen has been sent to Dr. D. R. Franz of the University of Connecticut for further study.

We have included a listing of the nudibranchs reported to date from New Jersey in Table 1.

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Table 1

Checklist of Nudibranchs Reported for New Jersey

Species	Collected by	Location
SACOGLOSSA		
Elysia catula (Gould, 1870)	Verrill & Smith (1873)	Great Egg Harbor
	F. Phillips (Franz, 1968)	Barnegat Bay
Elysia chlorotica (Gould, 1870)	Verrill & Smith (1873)	Great Egg Harbor
	K. Clark (Franz, 1968)	Cheesequake Park
	Franz (1968)	Shark River
Alderia modesta (Lovén)	K. Clark (Franz, pers. comm., 1968)	Cheesequake Park
NUDIBRANCHIA		
Doridacea		
Acanthodoris pilosa (Müller, 1776)	Loveland *et al.*, 1968	Delaware Bay
Doridella obscura Verrill	Verrill & Smith (1873)	Great Egg Harbor
	Franz (1967)	Delaware Bay
	Lowden (1966) as *Corambella baratariae* Harry	Not given
	D. Dean (Franz, 1968)	Raritan Bay
Polycerella emertoni Verrill	Chambers (1934)	Barnegat Bay
Polycerella conyma Marcus	Franz (1968)	Jarvis Sound
Tenellia fuscata (Gould, 1870)	Chambers (1934)	Barnegat Bay
	Franz (1968)	Shark River
	Hendler (personal communication)	Delaware Bay
Dendronotacea		
Doto coronata (Gmelin, 1791)	Verrill & Smith (1873)	Great Egg Harbor
	Loveland *et al.*, 1968	Shark River
Dendronotus frondosus (Ascanius, 1774)	Loveland *et al.*, 1968	Shark River
Eolidacea		
Aeolidia papillosa (Linnaeus, 1761)	Franz (1968)	Shark River
	Schwartz (Loveland *et al.*, 1968)	Manasquan Inlet
	Lowden (1966)	Not given
Cratena pilata (Gould, 1870)	Franz (1968)	Delaware Bay
	F. Phillips (Franz, 1968)	Barnegat Bay
Trinchesia aurantia (Alder & Hancock, 1842)	Loveland *et al.*, 1968	Shark River
Eubranchus pallidus (Alder & Hancock, 1842)	Loveland *et al.*, 1968	Shark River
Tergipes tergipes Forskal	Franz (1968)	Shark River

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